Proje team

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Patent No: 2021 – GE 86733

WATER ANGELS is an environmentally friendly project designed to evaluate all water resources in the world, such as dams, hydroelectric power plants, ponds, and to protect water resources.

With its pp structure and hydro dynamic structure, it creates arable areas on the water and aims to gain natural agricultural areas as an alternative to agricultural areas lost due to incorrect fertilizer use and pesticide application.

With water angels, it is possible to grow more than 4 types of crops in one period.

In this way, rural development can be supported by growing products.

additional income opportunities can be created for villages

TURKISH PATENT INSTITUTE

Receipt of Electronic Submission

The Receiving Office (RO/TR) acknowledges the receipt of a PCT International Application filed using ePCT-Filing. An Application Number and Date of Receipt have been automatically assigned (Administrative Instructions, Part 7).

Submission Number:	050899
Application Number:	PCT/TR2021/050899
Date of Receipt:	08 September 2021
Receiving Office:	Turkish Patent and Trademark Office (Turkpatent)
Your Reference:	P2021-1400
Applicant:	KARTAL, Sinan
Number of Applicants:	3
Title:	MOBILE IRRIGATED FARMING DEVICE

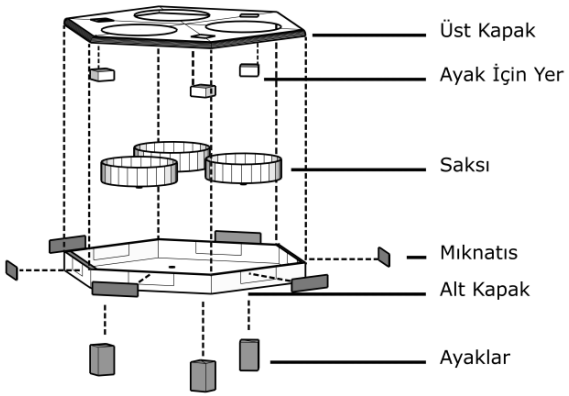
Water angels

They are mobile irrigated agricultural devices developed to prevent evaporation of water on stagnant water surfaces such as dams, lakes, hydroelectric power plants and to enable agriculture on the water surface.

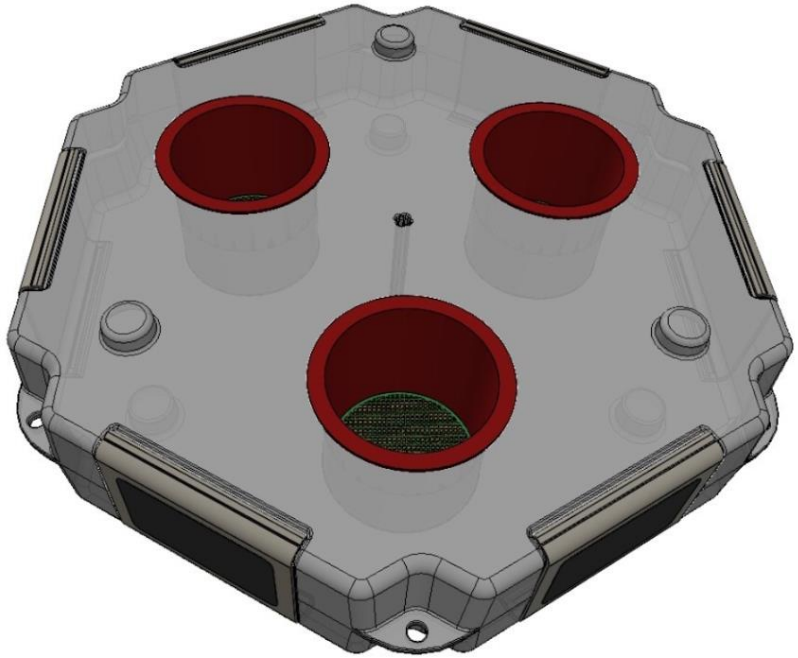
The goal of the project; To prevent the evaporation of water by not submerging on the stagnant water surface thanks to the air contained in it.

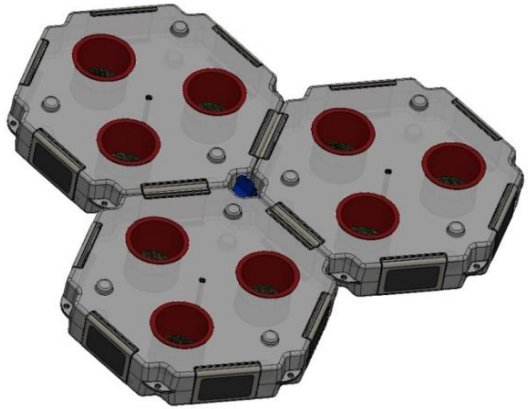
To enable irrigated farming activities on the stagnant water surface.
To create a natural farming environment.
To provide added value to the economy through natural products.
Thanks to the invention, its ponds can be used for vegetable growing.
To be able to buy clean products protected from pests, mice, moles and poultry, to grow quality natural products without using any chemical pesticides and fertilizers.

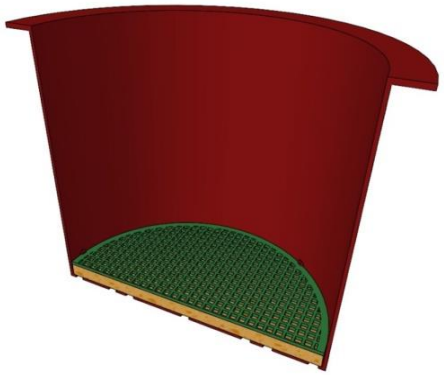
water angel design



water angels detail drawing



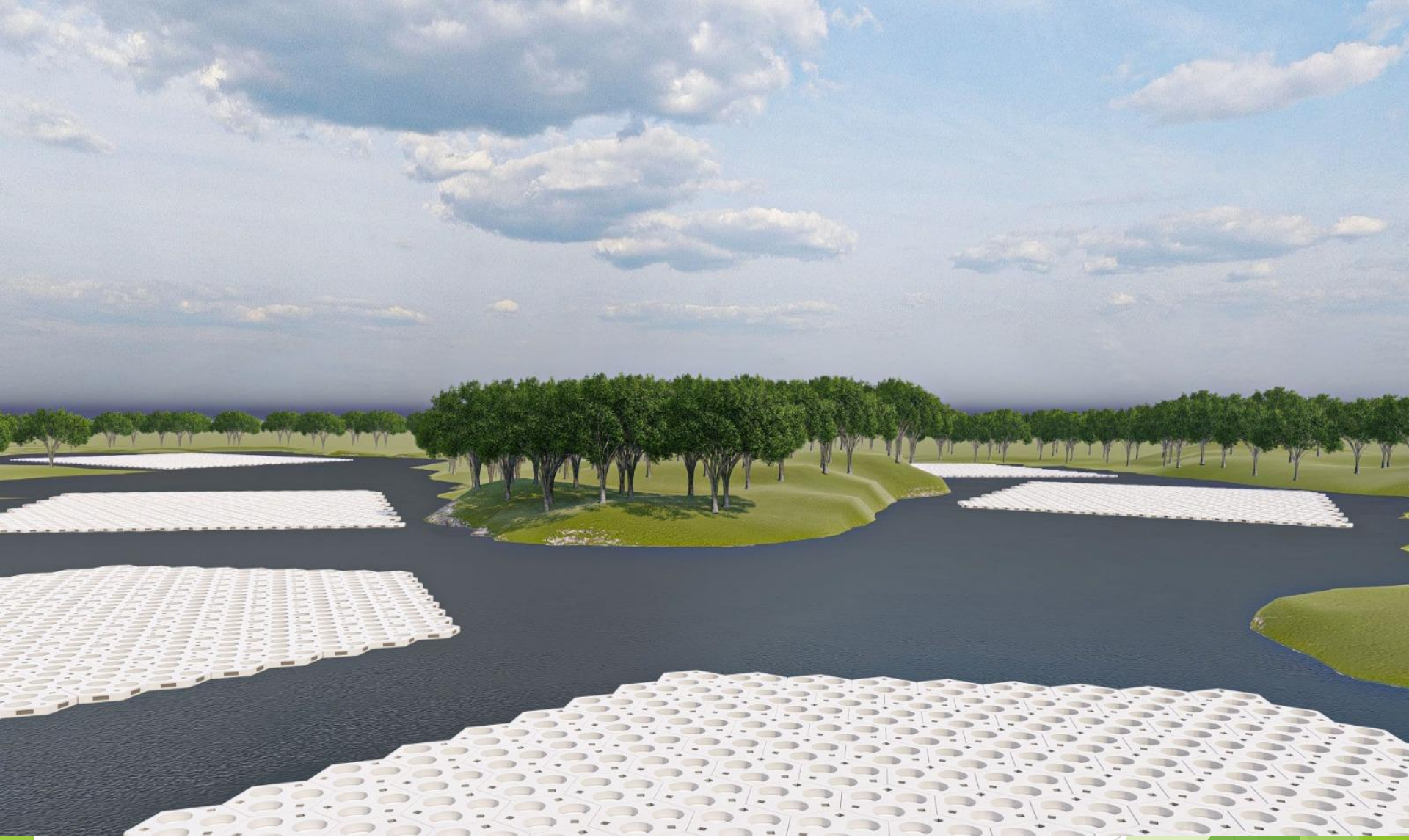




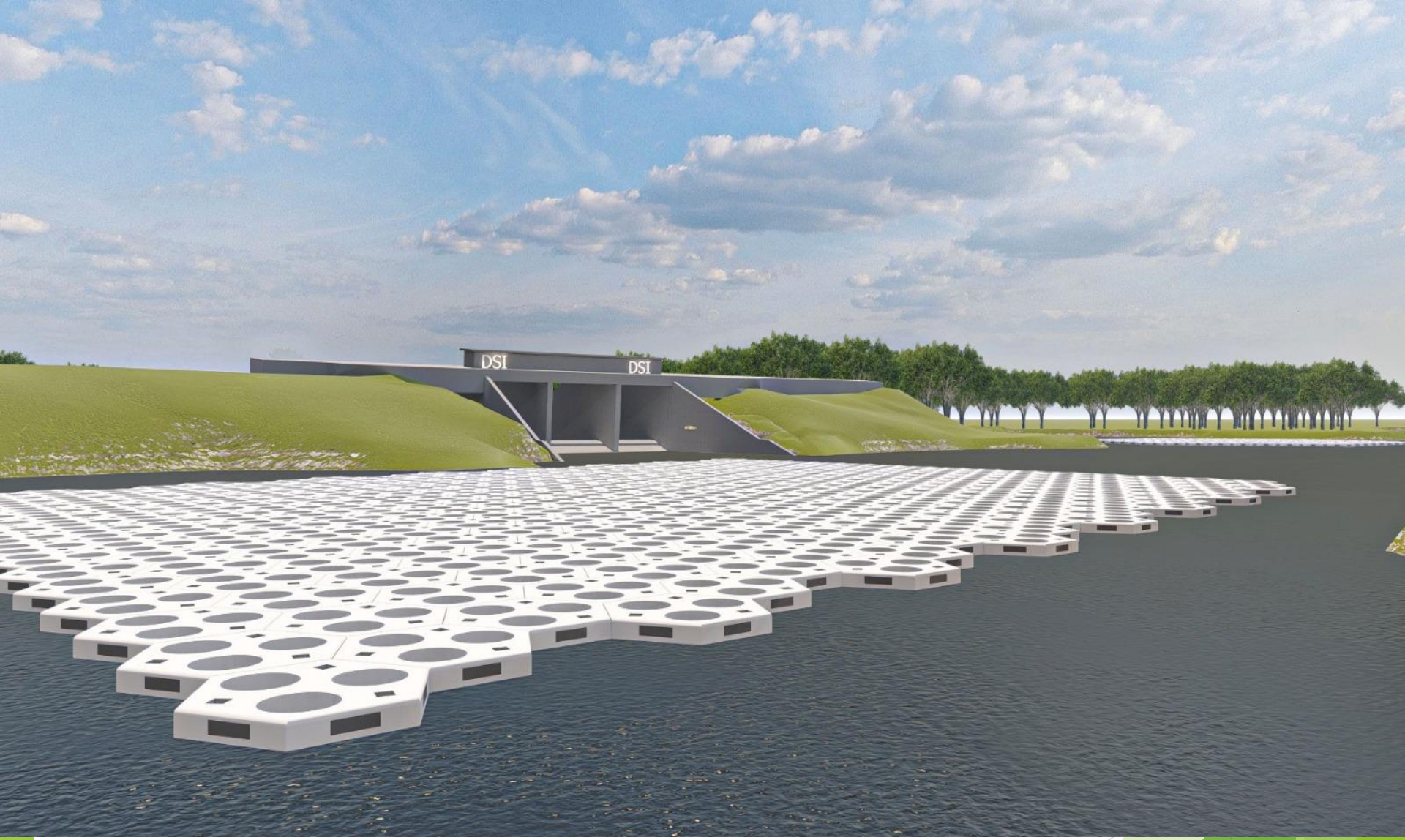
Establishment and implementation of the project;
Thanks to the magnets it has, it clings to each other on the water and covers the surface of the water. For this, it is enough to just throw it into the water. If the product is to be grown on it, the seeds are placed in cotton and left on the water. Thanks to the rich mineral waters, the products can grow in a quicker time. When it is time to collect, the products can be collected from the water angels, either by pulling from the shore, from the piers or by boat.

The mobile irrigated agricultural device is transferred from the shore to the still water. How many to transfer is the user's own preference, but they stay together as they will be held together with the help of magnets. The invention, which is filled with air, remains on the water surface. The seeds to be put into the invention and some humus soil, cotton and vegetables are placed in the pots. Thanks to the bottom cover containing at least one hole, the root of the plant continues into the water as it grows. Some water entering through this hole nourishes the plant.

crop grown water angels



No planting, just for stopping evaporation
Installation image



Installation to prevent evaporation


Water levels are maintained when evaporation is prevented, water costs are reduced

Project maintenance

service period Maintenance costs are very low and there is no malfunction problem.
These costs are minimal. Mobile irrigated agricultural devices are collected once a year and cleaned from possible algae spots.
In this way, the sun's rays can easily reach underwater.
Once a year, water angels need to be maintained and cleaned of algae 1 euro per angel.

Benefits of the project;

It prevents external wastes from filling the dam to the maximum extent.

Evaporation is prevented to a great extent by using the invention on the still water surface.

Water costs are reduced and there is no shortage of irrigation.

Existing waters are preserved.

Providing a natural farming environment and providing added value to the economy through natural products.

Thanks to the invention, ponds can generate income by growing vegetables.

Thanks to the invention, fertilizers and chemicals are not used, and products fed with 100% natural mineral water are purchased.

Products are protected from pests, mice, moles and winged pests.

· General features.

01: Windproof domed surface.

02: Modular snap-fit system.

03: Modular socket side surface.

04: Individual snap-fit system.

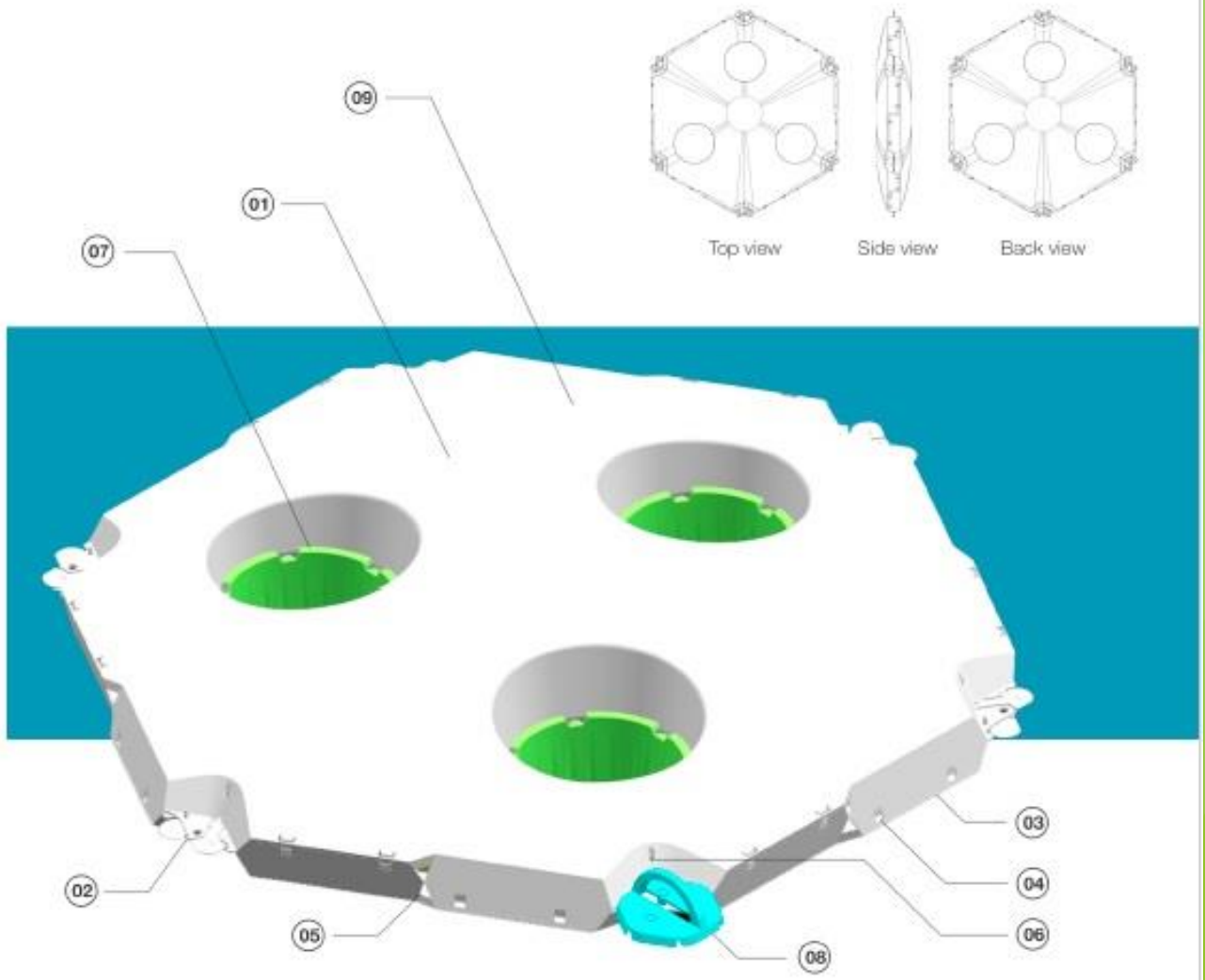
05: Side water inlet.

06: Water inlet hole.

07: Culture vessels.

08: Corner joint part.

09: Insulating plate (inside).



· Exploded view.

· Culture vessels (x3 unit).

· Corner joint part (x "X" units).

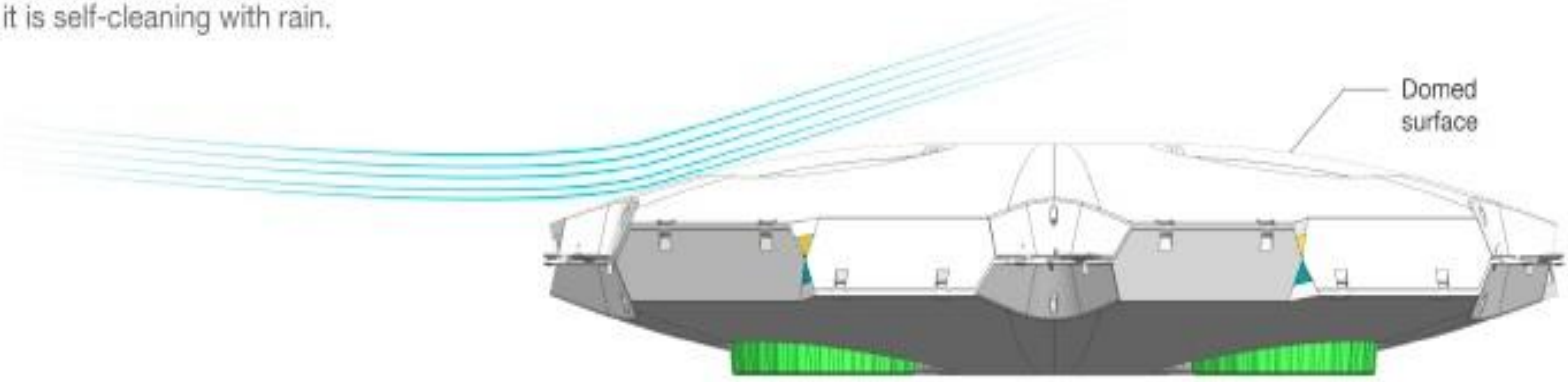
· Case (x2 unit).

· Insulating plate.

Aquatic surface cover module.

· Windproof domed surface.

The domed shape of the module surface prevents the direct impact of the wind.
This ensures system stability. Instead of rising with the wind, it sinks slightly
and then floats back up.
As an added value, it is self-cleaning with rain.



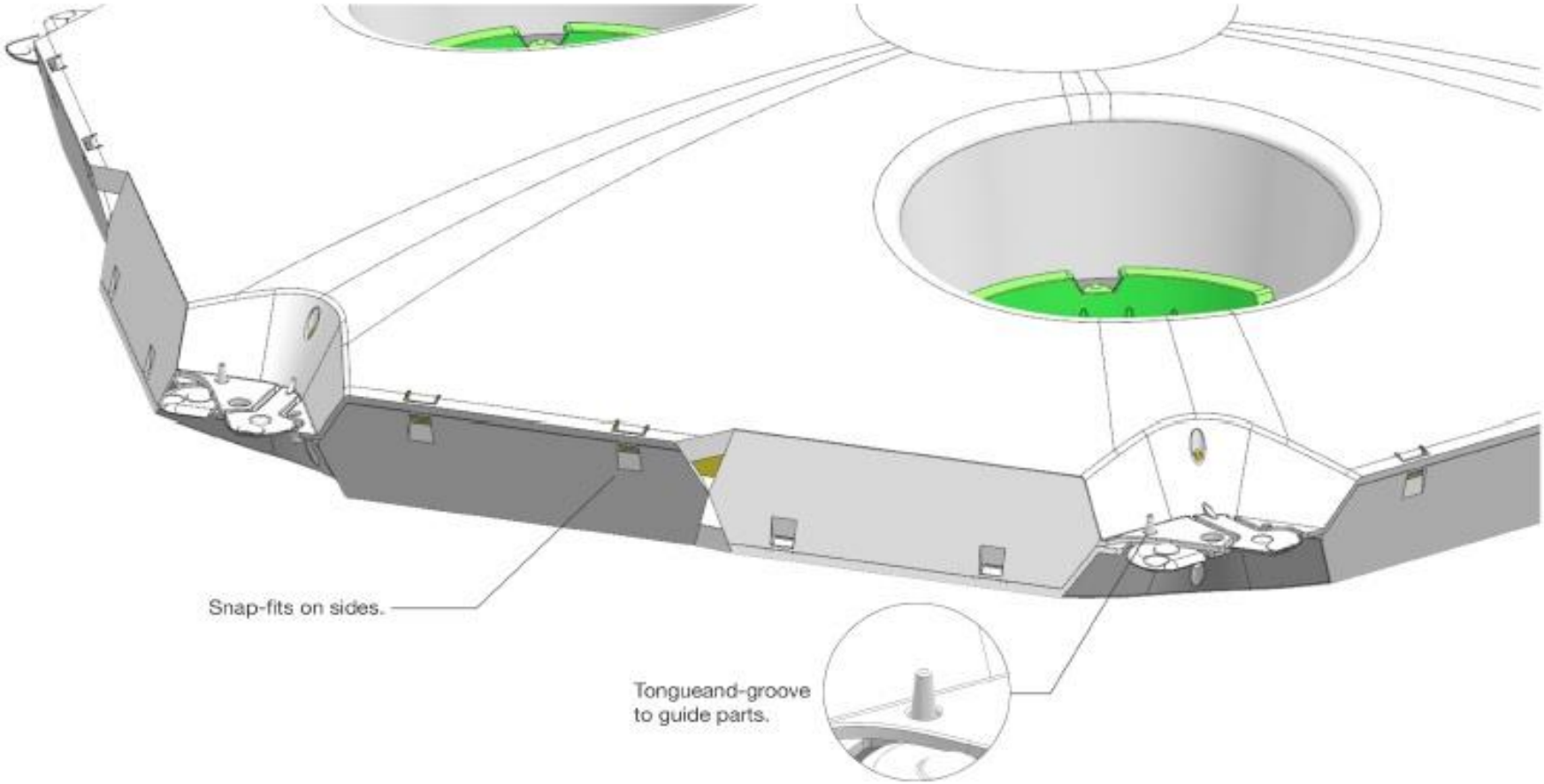
· Video demonstration:

Demonstration of the effect of air on domed surface.
Test with scaled 3D printed prototype.

Aquatic surface cover module.

- **Individual snap-fit system.**

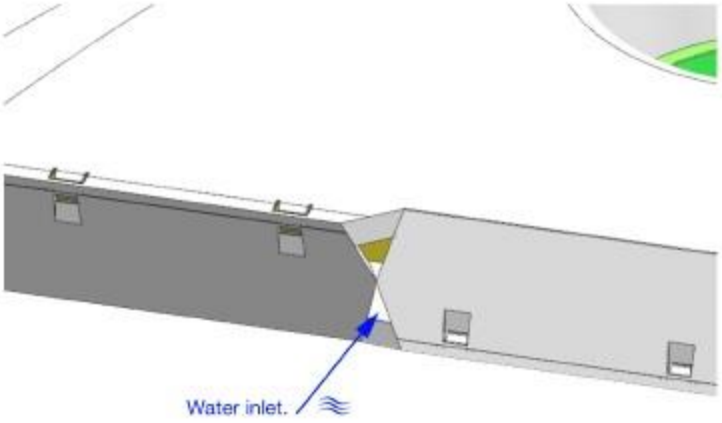
Casing parts are assembled by the snap-fits on their sides. To help guide them, they have tongue-and-groove corners.



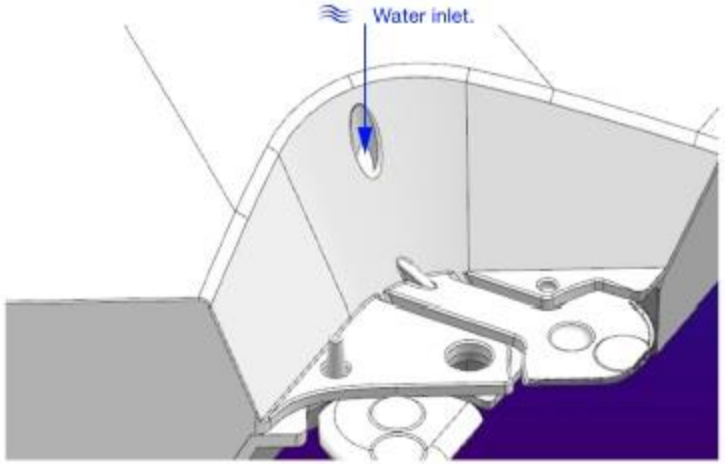
Aquatic surface cover module.

· Side water inlet and water inlet hole.

Water inlets allow the partial filling of the product in a certain percentage.
This avoids possible transfers due to the wind, since the system offers resistance thanks to the water inside it.



Side water inlet occurs at the junction of
the two shells, being symmetrical
and allowing easy filling of the system.

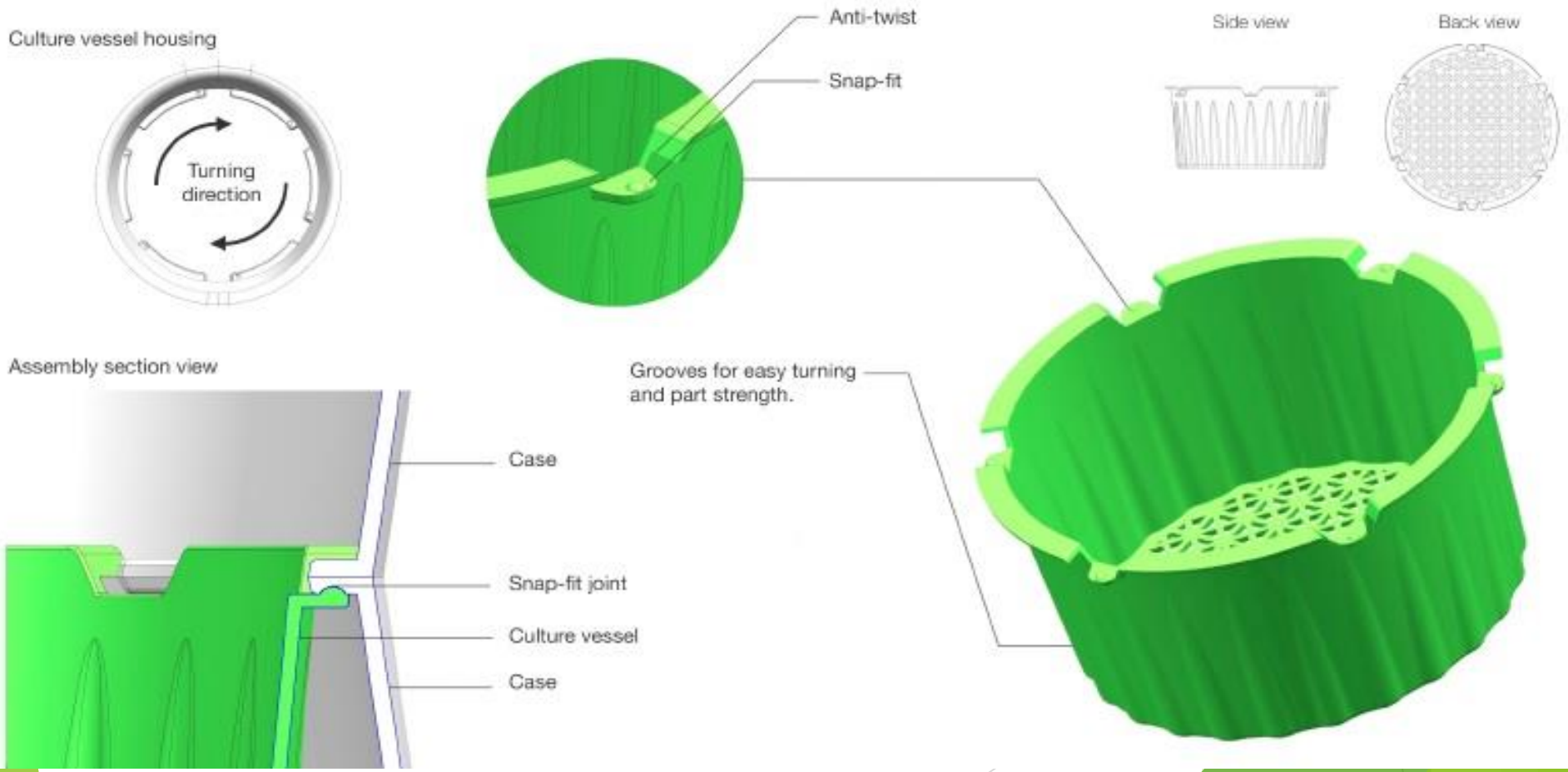


Water inlet hole is located in the corners.
Speeds up filling by placing the system in the water.

Aquatic surface cover module.

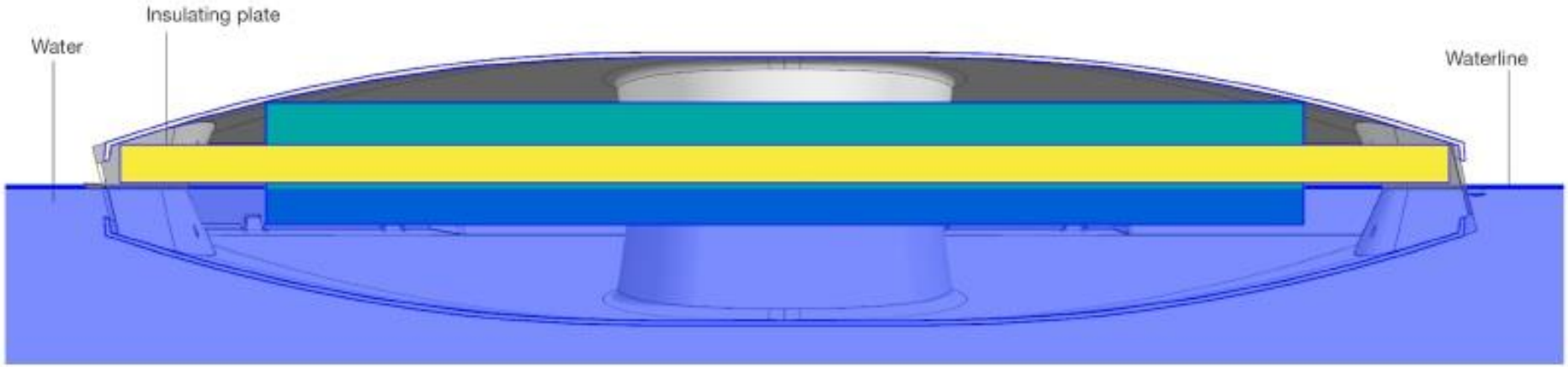
· Culture vessels.

Culture vessels have been redesigned to form a solid assembly.
They are located in the housings and rotated 11°. In this way, the snap-fits acts, ensuring the strong union between parts.



Aquatic surface cover module.

· **Insulating plate.**



***THE INSULATING PLATE REDUCES WATER TEMPERATURE BY 4°C TO 5°C.**